

REMARKS

By this Amendment, claim 1 is revised and claim 4 is canceled to place this application in immediate condition for allowance. Currently, claims 1, 5 and 7-11 are before the Examiner for consideration on their merits.

Even though this amendment is being presented after a final rejection, the revision of claim 1 should be entered since it merely incorporates the limitations of claim 4 therein.

Turning now to the prior art rejection, the question of obviousness now turns on whether the combination of the admitted prior art, Charles, newly-cited United States Patent No. 3,498,803 to Stookey, and Takahashi establish a *prima facie* case of obviousness against claim 1 in its amended form. Applicant submits that the applied prior art does not establish a *prima facie* case of obviousness and the rejection must be withdrawn.

In review, claim 1 now defines the grinding the glass body into a cylinder with free or fixed grains on the surface thereof. In the rejection, the Examiner asserts that the admitted prior art teaches a grinding step wherein fixed grains are on the surface.

Applicant submits that the combination of Charles, Takahashi, Stookey, and the admitted prior art does not establish a *prima facie* case of obviousness against claim 1 as amended.

A first key argument made by Applicant relates to the fact that the grinding step of claim 1 involves the presence of free or fixed grains on the surface of the glass.

As explained in paragraph [0006] of Applicant's published patent application (the published application), when the fragile materials are subjected to grinding, surface

roughness is caused involving microcracks therein. As explained in paragraph [0007], the grinding process results in the grinding fluid becoming attached to the ground glass and requiring removal. The prior art removal techniques are inadequate to date since they cannot remove all of the dirt. If the dirt is not removed in the cleaning step, extra processing is required, see paragraph [0012, 0013] of the published application and these extra steps create another set of problems in terms of efficiency, cost, and/or creating yet another problem, e.g., moisture on the surface of the glass.

The step of applying the pressurized steam is performed to successfully remove the dirt from the glass so as to avoid the problems in the prior art techniques detailed in paragraphs [0009-0013].

A key part of the rejection is the Examiner's conclusion that it would be obvious to replace the hydrofluoric cleaning step of the prior art with the steam treatment of Charles. As noted above, the prior art cleaning step is done because of the grinding fluid present on the ground glass body.

In the rejection, the Examiner alleges that it would be obvious to employ the steam treatment of Charles in substitution for the hydrofluoric acid treatment of the prior art. The problem with this approach is the failure to understand that the hydraulic acid treatment of the admitted prior art is for the purpose of removing the free or fixed grains on the glass body. With this purpose in mind, why would one of skill in the art use the steam treatment of Charles, which by the Examiner's own admission is for mechanically strengthening the glass body?

What the Examiner is doing is saying that because the admitted prior art

method teaches a hydrofluoric acid treatment (here the Examiner ignores the purpose of cleaning the grinding fluid) and Charles teaches both a hydrofluoric acid treatment and a subsequent steam treatment, which are for the purpose of strengthening the glass, the steam treatment of Charles can be substituted for the hydrofluoric acid treatment of the admitted prior art. The problem here is that the Examiner is ignoring the reasoning for the hydrofluoric acid cleaning treatment of the admitted prior art when making the modification of the admitted prior art.

It is Applicant's view that one of skill in the art would not look to Charles' method of strengthening a glass body using a steam treatment in place of the hydrofluoric acid treatment of the prior art.

The Examiner's reliance on Stookey to address the difference in the steam temperature between the invention and Charles is in error. In the rejection, it is stated at page 10, lines 5-17 that Stookey teaches a steam temperature range that encompasses the claimed steam range. First, whether the steam temperature range of the claims is encompassed by Stookey is irrelevant since the reasoning for modifying the admitted prior art is flawed. Stookey's steam treatment does not change this defect and cannot be used to formulate a proper rejection based on 35 U.S.C. § 103(a).

Second, Stookey's steam treatment is completely different from that of Charles so that one of skill in the art would not use the range of steam temperatures in Stookey in Charles' steam treatment. In commenting on the steam temperatures of Stookey, the Examiner seems to be implying that Stookey's provides a basis to say that the temperature range of Charles can be modified. The problem with this

approach is that Charles and Stookey's steam treatments are not in the least similar. The steam temperature conditions of Stookey are used to transform the glass or glass-ceramic to a rubbery product, whereas the steam treatment of Charles is to strengthen the glass body once it has been cleaned via etching. Therefore, why would one of skill in the art use the steam conditions of Stookey to modify the temperature range of Charles? There is no valid reason for doing so and the rejection in this regard is flawed and requires withdrawal.

This argument is coupled with the previously-made argument that the Examiner has no basis to conclude that the steam temperature range of 120-160 °C is obvious based on the about 190-260 °C temperature range of Charles. In the rejection, the Examiner insists that the range of Charles can be changed so as to encompass the claimed range. The reasoning for this is that Applicant has not presented any reason why the Charles temperature range should be narrowly construed. Applicant contends that the Examiner is improperly placing the burden on Applicant to rebut the allegation of obviousness when the Examiner has not provided a factual basis to support the modification of the Charles temperature range. The Examiner has not pointed to anything in Charles that would support the contention that Charles' temperature range can be lowered to the claimed range. To the contrary, Charles teaches a specific steam treatment for a specific reason. There is no reason for one of skill in the art to go outside this range as is proposed in the rejection and the rejection in this regard is improper.

The rejection is also flawed when considering the reliance on Stookey for the drying step. In the rejection, the Examiner admits that Charles does not teach the

drying step. In the face of this deficiency, the Examiner cites Stookey and says that Stookey and Charles teach similar steam treatment processes. This alone is error that mandates a withdrawal of the rejection. Charles treats the glass body 10-20 minutes to strengthen the glass body. In Stookey, the aim is to change the glass to a rubbery product. In col. 5, lines 10-15, one type of glass took two hours to transform with another type taking 3-4 hours. The time difference between the treatment of Stookey and Charles means that these two processes are not similar as the Examiner has stated. Since the aim of Stookey and Charles as well as the processes themselves are not similar, it is error for the Examiner to select one aspect of Stookey in order to supply the missing drying step in Charles.

Further, even if Stookey were properly combined with Charles, there is still no drying step in Stookey and without this, the rejection is incomplete. In the rejection, the Examiner alleges that the termination of the steam treatment leaves a carrier gas passing through the autoclave and this flow of carrier gas is tantamount to the claimed drying step. Notwithstanding the argument outlined above that one of skill in the art has no reason to use the steam treatment of Stookey to modify Charles, the allegation that the carrier gas continues to flow is not supported by any objective factual basis. First, Stookey does not say anywhere that the autoclave is operated with just a flow of air once the steam treatment is terminated. The only thing that Stookey says is that steam is introduced into the autoclave for a sufficient length of time until the desired transformation is complete. Even if the steam that is introduced has air with it, the only reasonable interpretation of Stookey is that the flow of steam, which constitutes steam and air, is terminated. This interpretation

means that there is no subsequent drying step and the Examiner has not produced prior art that teaches this aspect of the invention. Therefore, the rejection is flawed for this reason and must be withdrawn.

Applicant also traverses the reasoning used to formulate the rejection based on Takahashi.

Takahashi teaches the removal of dust adhered on the surface of optical fiber base material. This dust is a fire retardant dust containing chromium or zirconium that is generated from a carbon member in the drawing furnace as set out in paragraph [0003] of Takahashi. The dust is adhered on the base material by the action of static electricity generated on the base material surface. To overcome the adhesion, an optical fiber base material containing at least 100 to 1000 ppm of water molecules has been thermally treated in an atmosphere in the temperature range of 300 to 800 °C for at least ten hours. The removal of the ground dust by application of water jet according to the present invention is entirely different from the removal of the fire retardant dust of Takahashi using 100 to 10000 ppm of water under given heating conditions for about ten hours. If a ground surface of a glass body is treated as containing 100 to 10000 ppm of water under heating conditions of 300 to 800 °C and ten hours, Applicant is unsure as to what would happen, but are fairly certain that no cleaning effect would occur.

The allegation that Takahashi teaches jetting steam is also a misinterpretation of the reference. In the rejection, the Examiner states that Takahashi teaches that steam is applied to the surface by “jetting through a fixed nozzle or gas introduction hole (15) which is provided around the glass body.” In

fact, this glass introduction hole 15 is to introduce nitrogen along with the ppm level of moisture, and this cannot be considered to be jetting steam against the glass body as defined in claim 1. Since Takahashi fails to teach the claimed jetting step, the rejection is also improper for this reason.

DEPENDENT CLAIMS

Since claim 1 has been demonstrated to be patentably distinct from the applied prior art, its dependent claims are all patentable over this prior art.

SUMMARY

In summary, Applicant submits that a *prima facie* case of obviousness is not established against claim 1 in its amended form by the relied-upon prior art and that the rejection of claims 1, 5, and 7-11 should be withdrawn.

Accordingly, the Examiner is requested to consider the arguments made above, and pass all pending claims onto issuance.

If the Examiner believes that an interview would be helpful in expediting the allowance of this application, the Examiner is requested to telephone the undersigned at 202-835-1753.

The above constitutes a complete response to all issues raised in the Office Action dated July 21, 2009.

Again, reconsideration and allowance of this application is respectfully requested.

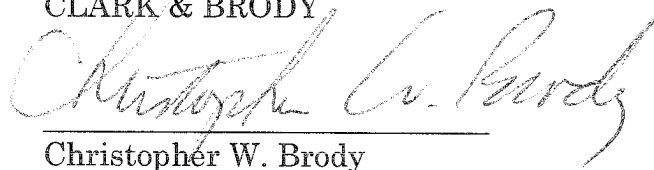
A petition for a two month extension of time is made. Please charge Deposit

Serial No.: 10/823,665

Account No. 50-1088 the petition fee of \$490.00. Please charge any fee deficiencies or credit any overpayment to Deposit Account No. 50-1088.

Respectfully submitted,

CLARK & BRODY

A handwritten signature in cursive script, appearing to read "Christopher W. Brody", written over a horizontal line.

Christopher W. Brody

Registration No. 33,613

Customer No. 22902

1090 Vermont Ave. NW Suite 250

Washington, DC 20005

Telephone: 202-835-1111

Facsimile: 202-835-1755

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